

In the Claims:

Note: Claims 1, 3, 13 and 14 are amended and new claims 15-17 are added.

Claims 3 and 13, indicated to contain allowable subject matter, have been re-written into independent form.

Please cancel claim 12 without prejudice.

Please replace the claims as follows:

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1. A color measuring device comprising:
a housing;
a plurality of photodetectors for generating data in response to sensed light; and
a field programmable gate array for reading the data from the plurality of photodetectors in parallel and including means for accumulating the data for a selected time period.

2. The color measuring device as set forth in claim 1 further comprising:
a plurality of signal output channels each connected to one of the plurality of photodetectors for communicating the data generated by each photodetector in response to the sensed light; and
the field programmable gate array being configured to receive data from each of the plurality of signal output channels in parallel.

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3. A color measuring device comprising:
a housing;
a plurality of photodetectors for generating data in response to sensed light;
a field programmable gate array for reading the data from the plurality of photodetectors in parallel; and
a plurality of optical filters each being paired with one of the plurality of photodetectors, each of the filter/photodetector pairs having a responsivity which extends over different overlapping wavelength regions at longer wavelength ends of a visible spectrum.

4. The color measuring device as set forth in claim 3 further comprising a translator converting the responsivity of said pairs into a responsivity mimicking a color matching function from which a tri-stimulus value can be provided when said pairs are exposed to light to be colormetrically measured.
5. The color measuring device as set forth in claim 3 wherein said filter/photodetector pairs provide a plurality of long-wavelength-pass electro-optical filters.
6. The color measuring device as set forth in claim 3 wherein said filter/photodetector pairs are disposed in an array.
7. The color measuring device as set forth in claim 3 wherein one of said filter/photodetector pairs has a responsivity extending over an entire visible spectrum.
8. A colorimeter for measuring color temperature comprising:
 - a plurality of filter/photodetector pairs, each having a responsivity which extends over different overlapping wavelength regions at longer wavelength ends of a spectrum, a color temperature of which is to be measured by said colorimeter;
 - a field programmable gate array programmed to accumulate the responsivity from each of the plurality of filter/photodetector pairs in parallel; and
 - a translator converting the responsivity into a responsivity mimicking a color matching function from which values can be provided representing said color temperature.
9. The colorimeter according to claim 8 wherein said spectrum is from an emissive source.
10. The colorimeter according to claim 9 wherein said emissive source includes one of a light source, a video display, a radiating body and a black body.
11. The colorimeter according to claim 8 wherein the field programmable gate array includes:

means for receiving the responsivity from each of the plurality of filter/photodetector pairs in parallel;

means for accumulating the responsivity over a predetermined time period; and

means for outputting the responsivity accumulated.

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13. A process for measuring a color of an object comprising the steps of:
filtering light from the object with a plurality of filters (3/28-30)
detecting the filtered light and generating a plurality of light signals representative of the filtered light detected; (3/38-45)
reading the plurality of light signals in parallel (3/49-51)
wherein the reading includes accumulating the plurality of light signals for a selected time period; and Lubbers 8-3/10-15
generating output signals based on the plurality of light signals read which represent the color of the object. 4/10-68

14. The process as set forth in claim 13 wherein the plurality of filters having a light transmission response being non-uniformly distributed across a visible spectrum and each overlapping at longer wavelengths of the visible spectrum.

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15. The color measuring device as set forth in claim 1 wherein said filter/photodetector pairs provide a plurality of long-wavelength-pass electro-optical filters.

16. The color measuring device as set forth in claim 1 wherein said filter/photodetector pairs are disposed in an array.

17. The color measuring device as set forth in claim 1 wherein one of said filter/photodetector pairs has a responsivity extending over an entire visible spectrum.